

REMARKS

By this Reply, Applicants have amended independent claims 1 and 14 and cancelled claim 2. Claim 1 has been amended to indicate that the logic-based current interrupter “generates a second signal” in response to the circuit indicator signal. Claim 1 has also been amended to include a “current switch that selectively prevents the flow of current in the electrically conductive line in response to the second signal.” Support for the added limitations can be found at least in paragraphs 16-18 of the specification, in cancelled claim 2, and in claim 21. Claim 14 has been amended to indicate using a “logic-based device to prevent the flow of the DC current flowing in the electrically conductive line if the circuit indicator signal is indicative of a condition where the voltage level is higher than the reference voltage.” Support for this limitation can also be found at least in paragraphs 16-18 of the specification and claim 21. Thus, no new matter has been added. Accordingly claims 1, 3-19, and 21-24 are pending in this application. In view of these claim amendments and the remarks set forth below, Applicant request the prompt re-examination and allowance of this application.

In the Office Action, claims 1, 10, 11, and 14 were rejected under 35 U.S.C 102(e) as being anticipated by U.S.P.N. 7,010,704 issued to Yang et al. (“Yang”), claims 2-4, 12, 13, 15-19, and 21 were rejected under 35 U.S.C 103(a) as being unpatentable over Yang in view of U.S. patent application publication 2003/0202304 issued to Canova et al. (“Canova”), and claims 5-7 and 9 were rejected under 35 U.S.C 103(a) as being unpatentable over Yang in view of U.S.P.N. 6,952,335 issued to Huang et al. (“Huang”).

35 U.S.C. 102(e) rejection of claims 1, 10, 11, and 14 as being anticipated by Yang.

Claims 1 and 14 are independent, and claims 10 and 11 depend from claim 1. Applicant has amended independent claims 1 and 14. Therefore, these rejections are moot. With respect to the amended claims, Yang does not disclose each and every element of the claims. For instance, Yang does not disclose a "current switch that selectively prevents the flow of current in the electrically conductive line in response to the second signal," as recited in amended claim 1. Yang also does not disclose using a "logic-based device to prevent the flow of the DC current flowing in the electrically conductive line if the circuit indicator signal is indicative of a condition where the voltage level is higher than the reference voltage," as recited in amended claim 14.

Yang discloses an apparatus for dynamically adjusting the power consumption of a CPU used in a notebook computer to prevent the computer from over heating. When a current in the circuit indicates a condition of over heat, the operating frequency of the CPU is reduced to reduce power consumption, and thus, CPU temperature (Yang, Background of the Invention, column 1, line 10 – column 2, line 20). Yang, therefore, describes an apparatus to detect the current in the circuit and dynamically adjust the operating frequency of the CPU to prevent the computer from shutting down due to over heating (Yang, column 2, line 59 – column 2, line 65). The apparatus of Yang does not, however, prevent the flow of current in the circuit. Reconsideration is requested.

35 U.S.C. 103(a) rejection of claims 2-4, 12-13, 15-19, and 21 as being unpatentable over Yang in view of Canova.

Claim 2 is cancelled, claims 3, 4, 12 and 13 depend from claim 1, claims 15-19 depends from claim 14, and claim 21 is independent. Yang and Canova do not disclose each and every element of amended independent claims 1 and 14, or independent claim 21. For instance, neither Yang nor Canova disclose a “current switch that selectively prevents the flow of current in the electrically conductive line” as recited in amended independent claim 1, “a logic-based device to prevent the flow of the DC current flowing in the electrically conductive line” as recited in amended independent claim 14, and a “current switch that selectively prevents the flow of current in the electrically conductive line in response to the current interrupt signal” as recited in independent claim 21.

Canova discloses an electronic circuit breaker to protect a circuit against transient over currents (Canova, Abstract). When an over current through the circuit is detected, the circuit breaker of Canova controls the current in the circuit to be below a limit value (I_{limit}) for a preprogrammed delay time (T_d). Once the delay time has elapsed, the current in the circuit is decreased further to a stand by value ($I_{stand-by}$) (Canova, column 2, paragraph 0025). Figure 3 of Canova shows a sketch of the current in the circuit as controlled by the circuit breaker of Canova. As shown in Figure 3, Canova does not prevent the flow of current in the circuit but merely reduces it to lower value.

In the rejection to claim 21 on page 6 of the Office Action, the Examiner asserts that (third paragraph) “Canova discloses a current switch [Fig. 1, 7] that selectively

prevents the flow of current in the electrically conductive line in response to the current interrupt signal [page 2, paragraph 0020, lines 17-19]."

However in the last few lines of paragraph 0020, Canova discloses that the switch "constitutes a protection against transient overcurrents, and opens the circuit in a way described in what follows." Following this statement, Canova in paragraph 0025, describes that when an over-current in the circuit is detected, the switch reduces the current to I_{limit} for a preprogrammed delay time T_d , and then reduces the current to a stand by value ($I_{\text{stand-by}}$). FIG. 3 of Canova, which graphically depicts how the circuit breaker of Canova protects the circuit against over currents, also shows that the current is decreased to I_{limit} for time T_d before being decreased to a finite value $I_{\text{stand-by}}$. That is, the circuit breaker of Canova does not protect against over currents by preventing the flow of current in the electrically conductive line, as recited in claim 21.

If Canova actually does prevent the flow of current in the circuit as alleged by the Office Action, combining Canova with Yang would destroy the operation of Yang. Yang indicates that the "main purpose" of the invention is to dynamically adjust the operating frequency of the CPU to prevent sudden shut-down of the computer system due to high loading (Yang, column 2, lines 60-65). Therefore, if Canova does prevent the flow of current when an over-current is detected, it would shut-down the computer system of Yang.

Accordingly, Yang in view of Canova does not disclose each and every limitation of amended independent claims 1 and 14, and independent claim 21. For at least this reason, independent claims 1, 14, and 21 are patentable over Yang in view of Canova. Claims 3, 4, 12 and 13 depend from claim 1, and claims 15-19 depends from claim 14.

Therefore, these claims are also patentable over Yang in view of Canova at least for the same reason that their respective independent claims are allowable over Yang in view of Canova.

35 U.S.C. 103(a) rejection of claims 5-7, and 9 as being unpatentable over Yang in view of Huang.

Claims 5-7 and 9 depend from claim 1. Huang does not remedy the deficiencies of Yang described earlier with reference to the rejection of claim 1. In particular, Huang does not disclose or suggest that a “current switch that selectively prevents the flow of current in the electrically conductive line” as recited in amended claim 1. Therefore, Yang and Huang, alone or in combination, do not disclose or suggest each and every element of amended independent claim 1. Therefore, claims 5-7 and 9 are allowable over Yang in view of Huang at least for the same reasons claim 1 is allowable, due to their dependence on claim 1.

CONCLUSION

In view of the above remarks, Applicant respectfully submits that claims 1, 3-19, and 21-24 are in condition for allowance. Accordingly, Applicant respectfully requests reconsideration and re-examination of this application and the timely allowance of the pending claims.

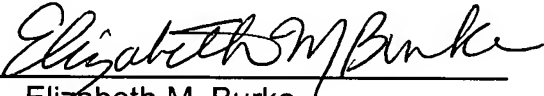
The Office Action contains characterizations of the claims and the related art, with which Applicant does not necessarily agree. Unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization in the Office Action.

If the Examiner believes a telephone conversation might advance prosecution, the Examiner is invited to call Applicant’s undersigned representative at 202-408-4488.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

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